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ABSTRACT

A comprehensive television (TV) and videotape system was installed in the elementary school in Lincoln Heights, Ohio, the nation's largest all-black city. With the support of industry and local educational television, every classroom was equipped with a six-channel closed circuit TV set and six headphones, at a cost of $42,250. The purpose of the project was to use TV programs to improve the academic performance of the school's students, who previously had been underachieving. The program was flexible, teacher controlled and attracted staff commitment. Existing shows, such as Sesame Street and Electric Company, and teacher designed programs were used as integral parts of the instructional effort. Preliminary test results indicated significant improvement in student achievement, particularly in language arts. For example, as compared with the previous year's classes, second-graders showed an increased gain of five months in vocabulary level and six months in reading comprehension; the corresponding figures for third graders were five and three months. The conclusion was reached that TV used systematically for recognized goals is an effective teaching tool and plans were made to expand the program. (PB)

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REPORT OF TELEVISION MULTI-CHANNEL SYSTEM IN LINCOLN HEIGHTS ELEMENTARY SCHOOL

PROGRESS REPORT

September 1973

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I. BACKGROUND

TELEVISION AS A TEACHING TOOL

In the fall of 1972 a comprehensive television and video tape system was installed in the elementary school in Lincoln Heights, Ohio, the nation's largest all-black city. The system provides every classroom with a six-channel closed-circuit television set and six headphones.

Instituted and coordinated by educational television station WCET-TV48, which serves the greater Cincinnati area in which Lincoln Heights is located, a major effort was launched to involve local industry with television and education in the creation of a total comprehensive television service with the capability for the effective use of a wide variety of programs designed to aid teachers in solving elementary learning problems.

GENESIS OF THE PROJECT

The need for upgrading learning patterns of the students in Lincoln Heights Elementary School had long been recognized by the Lincoln Heights administration. When, in February of 1970, the Lincoln Heights school district merged with the larger neighboring Princeton

school district, a battery of tests indicated that a majority of the Lincoln Heights children were achieving below levels appropriate for their ages in reading and mathematics. Such indications resulted in immediate reduction of class size, the development of a resource center, the addition to the staff of reading and math specialists as well as special activity teachers in art, music, and physical education. Early start classes were instituted and the procurement of books was upgraded.

Standardized tests administered a year later showed real progress, but indicated that the process of catching up was far from complete. It was then that members of the staff of WCET developed the proposal to attack the problem first by using existing instructional television programs such as "The Electric Company" and "Sesame Street" and later to develop materials directly aimed at helping Lincoln Heights children to achieve learning levels commensurate with their age and appropriate grade placement. The proposal was then presented to the teachers and administrative staff of Lincoln Heights, who enthusiastically adopted it and encouraged its establishment.

From the start, Lincoln Heights teachers, dedicated as they were to helping their small charges to learn,

enthusiastically accepted the plan and set about among themselves to make it work. Since the program was wholly based on teacher utilization, it could succeed only with their wholehearted cooperation. WCET continued to supply study guides and to consult on a frequent basis to assist teachers in the selection and the effective use of programs which they were encouraged but not required to use.

INDUSTRY INVOLVEMENT

The obvious need for equipment and funding was enthusiastically met by the General Electric Aircraft Engine Group, The Ford Motor Company Fund, and The Andrew Jergens Foundation. Together, the industries and the foundation provided a unique electronic system including: forty 23-inch GE color television sets, each with six headphones, seven color video tape machines, fifty video tapes, and provision to service the equipment for two years. Every television set can pick up any of the six closed-circuit channels plus the regular on-air Channel 48 programs.

The original proposal called for $56,328 which included installation, hardware, one-half the salary of a coordinator, and the services of a technician. However, Princeton school district provided a person to operate the

equipment and assigned the Lincoln Heights assistant principal to coordinate the school aspects of the project. WCET assumed additional responsibility for technical advice and teacher assistance. M ntenance monies were included in the proposal. Thus $14,078 were saved by in-kind services, so the project got under way for a total of $42,250 in cash and equipment contributions.

Considering that the equipment can be expected to last from five to ten years, probably the latter, since it is well cared for, and that Lincoln Heights enrolls 782 pupils, the per pupil per year cost would be approximately $2.24. Looking at the hypothesis that all the equipment will last for at least five years, the cost of the system at $42,250 is approximately equal to what it would cost to provide salary, benefits, equipment and maintenance for two reading specialists for one year. It seems reasonable to conclude that two reading specialists could not provide in one year the comprehensive services provided by this system over a five-year period.

COMMITMENT OF EDUCATIONAL TELEVISION AND THE SCHOOL SYSTEM

From the start there was enthusiastic cooperation between the staffs of the Lincoln Heights Elementary

School and WCET-TV. Both groups were committed to the success of this exciting new venture in learning.

The Princeton School District at the start hired Vicki Bright, a teacher aid who was trained by WCET's staff to operate the equipment. She learned to make minor equipment adjustments and she kept fully informed on curriculum developments and teachers' needs. She also kept teachers informed about new programming.

In addition, the principal, Ernest Ector, and the assistant principal, Noel Taylor, have expended a great deal of time in encouraging optimal use of the system and in assuring that teacher needs were being met.

WCET staff have provided a constant liaison between the school and the television station. In addition to providing teacher training and curriculum information, Mrs. Marjorie McKinney, WCET Director of Instructional Television, has regularly attended teacher meetings to explore with teachers the problems and potential for full and effective use of the video tape system.

II. THE SYSTEM

FLEXIBILITY

There are three great advantages to the television system as it was planned and established at Lincoln Heights which enhance the total flexibility of the system.

First, teachers at Lincoln Heights were able to create their own television schedules from the offerings of six closed-circuit channels plus Channel 48's open circuit, rather than having to rely solely on what was being broadcast on the air at a certain time. Television schedules and curriculum guides provided to the teachers enabled them to be constantly aware of the programming offered by WCET. Because of the record-and-playback capability of the video tape machines, each teacher could order any program to be shown to students at any time. In addition, a teacher could request that a program be taped and held for use at any time in the future.

Second, total access to television receivers allowed use of the system at any time and did not necessitate reserving a special television room and moving the students there, as in the case in schools where there are not enough television receivers.

Third, the availability of six headsets with each television receiver enabled teachers to do advance work, or remedial work, in small groups in each class. Teachers could provide some students with individual attention while others were watching a favorite science or social studies program. One teacher reported, "'The Electric Company' gives me an extra half-hour a day to work with individuals."

The flexibility of the system was evidenced by its frequent and continuous use, indicated by the full schedule of programming requested by the teachers (see appendix).

The single most important aspect of the system has been that it was totally teacher-controlled. Teachers followed curriculum offerings, ordered and scheduled tapings and playbacks, set up small-group sessions, and determined within the limitations of the tape supply what programs would be stored for later use. The teachers at Lincoln Heights used television as an integral part of the classroom curriculum. The experience at Lincoln Heights demonstrates that when teachers can control the system and are trained in its effective use, they become the most enthusiastic proponents of the use of television as a teaching tool.

Vicki Bright, the aptly named young woman who presided over the VTR equipment, scheduled the programs, distributed guides and kept teachers up-to-date on new programming, also proved adept at running the camera which Lincoln Heights purchased with a major effort by teachers, students, parents, the community and a corporate contribution. To quote the assistant principal and curriculum director who pinch hit on running the equipment, "The performances were not Hollywood productions, but they did develop poise and a positive self image for the children." He has already used the camera and recorder to tape student concerts. Individual teachers used the equipment to critique and improve their teaching techniques.

The system also allowed for appropriate programs from commercial stations to be taped for play back; "Four Children," produced by a local station, proved to be a valuable resource for developing ethnic understanding in upper grades.

All-school assemblies, which had previously been precluded due to the size of the auditorium, were possible with the television system. The TV assemblies provided every child a front seat and saved time required

to pass several hundred children to and from classrooms to the assembly room. Such assemblies also allowed teachers to use assembly materials for discussion and even to involve children during the assembly.

The director of the resource center regularly taped short programs designed to encourage children to read, by showing and telling about books in the center. Children were often featured on these programs. A math teacher taped short exercises in basic math operations to be used by children who need extra practice. A physical education teacher also developed single concept tapes for pupil use.

USES OF THE SYSTEM

By the end of September 1972, initial staff in-service activities and partial completion of the closed-circuit system were accomplished and the project was begun.

Mrs. McKinney helped staff members select those programs that would be most appropriate for students at various grade levels. Although the emphasis was placed on reading programs, many programs were chosen to supplement other curriculum areas.

The most frequently viewed reading program was "The Electric Company," a program designed to develop vocabulary and word recognition skills among second grade students and to be used remedially among third and fourth grade students.

Aired for teacher use seven times a day, five days a week, this program was seen at the outset as a major tool for use in the system and did have perhaps the greatest single impact on building reading skills.

First grade teachers found that the use of programs such as "Listen and Say, Vowels" and "Listen and Say, Consonants," as well as "The Electric Company," gave children a good background in language art skills and helped them develop a wider vocabulary than in earlier years. Additionally, teaching of reading skills was made easier due to the children's recognition of word elements. First grade teachers credited "Ripples" with helping to enhance the children's self-image.

Science and social studies were also used. Although some of the science programs were too difficult for some grade levels, one fifth grade teacher selected programs about the ocean from several series and used them with

his class because, he said, "There is little material about the ocean and most of the children have never seen one." Another teacher revised the sequence of teaching science units to take advantage of the television series.

The two full time music teachers used the music programs with their classes to familiarize children with musical instruments that they might never see otherwise, to broaden their exposure to rhythms and different forms of music and to give them the pleasure of learning songs that aren't in their books.

Kindergarten morning and afternoon classes viewed "Sesame Street" regularly. The teacher of early start groups, three and four year olds, selected the parts of "Sesame Street" and "Ripples" that she felt were appropriate for these children. Early start children proudly displayed seedlings growing from seeds whose planting was inspired by a "Ripples" program.

Educable mentally retarded (EMR) classes used "Other Families, Other Friends" as the core of their social studies curriculum. The teacher reported that the programs motivated the children to find out more

about geography. She was able to correlate her teaching with the series. EMR children also looked forward to "The Electric Company." The teacher was able to carry learning over into other areas. "All About You," a primary health series is also valuable with the EMR pupils. After watching the programs each child added a page to his own booklet, "All About Me."

"To Aid, To Learn," was used to assist para-professionals to upgrade their skills in assisting the teacher to be more effective.

III. PROGRESS REPORT

PRELIMINARY TEST RESULTS

The combined effort on the part of a school system and staff, an educational television station, industry, and a foundation has produced significant advancement in learning skills of students in Lincoln Heights Elementary School.

Preliminary results of the Gates-MacGinitie Test, administered in May of 1972 and May of 1973 to students in grades one through three, indicate that the regular, structured application of this system by teachers trained

in its effective use has had a positive effect on vocabulary growth and reading comprehension, especially among the second and third grade students at whom reading improvement was aimed. Since the Gates-MacGinitie Test was not administered to kindergarten students in May of 1972, no comparisons can be offered for students who were in the first grade in May of 1973.

Results from the Stanford Achievement Test, administered in October of 1972 and May of 1973, are expected to be completed by the end of the year and will define more clearly the progress made in grades one through six.

Test results among second graders in May of 1973 revealed a mean vocabulary score which was 5 months ahead of comparative scores for second graders the year before. The same time period, based on a 10-month school year, showed an improvement in reading comprehension which was six months ahead of similar mean scores for the second grade class the year previously.

Before 1973 testing, Lincoln Heights primary

students had scored approximately five months below national norms in similar types of testing. This year children in the second grade achieved vocabulary and comprehension mean scores that equated with national mean scores for that grade level.

Among the third graders tested, the mean score in vocabulary in 1973 was five months higher than the comparative score in the third grade the year before. The mean score in comprehension was three months higher than the previous year's score.

The third grade teaching staff was the same in each of the two years. Hence, much significant improvement (vocabulary, 5 months and comprehension, 3 months) can be attributed in large part to the television system and its full and flexible, teacher-controlled schedule. Third grade statistics indicate that significant progress has taken place in one year. In conjunction with the efforts of highly skilled teachers the television project definitely had an impact on the achievement of Lincoln Heights children.

TEACHER REACTION

If any television program were singled out and

identified as the one program that had the greatest impact on reading achievement, that program would be "The Electric Company." All primary staff members stated that this particular program definitely helped children improve vocabularies and refine their decoding skills. The rapid pace, the repetition, and the comical and animated sketches, among other features, held the attention of the students and provoked their active participation. Additionally, the playback of this program seven times a day enabled the teachers to use the program in a variety of ways and according to their own needs and class schedules.

Teachers reported that the systematic use of such television programs as "The Electric Company," "Sesame Street," "Wordsmith," and "Explorers Unlimited" assisted in speeding up the acquisition of reading skills. Teachers agreed that the programs were not add-ons to heavy schedules, but that television offered an alternative way of teaching and a reinforcement of their total effort.

A second grade teacher said, "I couldn't begin to do what I'm doing without 'The Electric Company.' I let some children use the ear phones while I work with others."

referring particularly to "The Electric Company" and "Wordsmith," other teachers agree that "it's a wonderful vocabulary builder." A third grade teacher said, "just seeing programs in color is an aesthetic experience. How can you measure the value of a thing like that?"

The principal and fourth grade teachers commented, "It settlessthe kids. Lots of them come to school upset and they sit down to look at a program and they forget their troubles and can get on with their work." Said another, "'Other Families' and 'Explorers Unlimited' give the children experiences they'd never get in any other way. One program was about a salt mine. These children had no idea salt came from the ground." Such comments were repeated throughout the Lincoln Heights teaching staff. Their experience bears out Dr. Wilbur Schramm's research findings that teachers use and like television when it is easily accessible and when training in effective use of television is provided.

IV. CONCLUSION

Educators recognize that if teachers are to make effective use of television, they must have ready access to sets and be able to use programs at will. The thorough set-up provided at Lincoln Heights Elementary

School by General Electric, Ford and The Jergens Foundation and the cooperative efforts of teachers and administrators as well as WCET consultants have optimized the utility of the television system to make it an integral part of the curriculum.

Most of the teachers had used some television, but no one had access to the breadth of programming, the degree of flexibility offered by the Lincoln Heights system and the use of programming by teachers at will. It took several weeks for teachers to realize that they could have programs on request, that TV should be an integral part of their teaching resources, and that some programs might be used to give them more time to work with small groups and individuals.

In case after case, television used systematically for recognized goals has proved to be an effective teaching tool. In Learning from Television, Godwin C. Chu and Wilbur Schramm state that:

> For one thing, it has become clear that there is no longer any reason to raise the question whether instructional television can serve as an efficient tool of learning. This is not to say that it always does. But the evidence is now overwhelming that it can, and, under favorable circumstances, does. This evidence

> now comes from many countries from studies of all age levels from pre-school to adults, and from a great variety of subject matter and learning objectives. The questions worth asking are no longer whether students learn from it, but rather, (1) does the situation call for it? and (2) how, in the given situation, can it be used effectively?

The situation at Lincoln Heights, all parties agreed, called for the application of an effective and compelling teaching tool. Television was selected as one of the best additional teaching tools to meet these criteria. As outlined above, the effectiveness of the system more than justified the costs involved.

Through the installation of a total and complete teacher-controlled system with fully adequate equipment for ready access to sets, flexibility of program scheduling, and potential for small group use, the program was structured from the outset to be as effective in achieving positive results as the combined efforts of those involved could make it.

Plans to develop and fund new programs to meet needs in math and literature, as well as to fulfill the teachers' desire for more short series, continue and,

in fact, plans for production of a new math series are underway by WCET.

Future expansion and evaluation of the program will elicit further guidance as to the direction TV learning should take. But the preliminary results do show significant steps forward for the benefit of the students in Lincoln Heights Elementary School.

# # #

APPENDIX

I. Schedule of taped programs

II. Recommendations of Lincoln Heights Elementary School administration and teachers

III. Schematic diagram of the television-video tape system

APPENDIX I

SCHEDULE OF TAPED PROGRAMS

	No. Times Presented	Grade
Sesame Street	5 daily	ES, K, 1
Electric Company	7 daily	2-4
Listen and Say Vowels	5 weekly	1-3
The Wordsmith	5 "	5-6
Breakthrough	2 "	5
Americans All	5 "	5-6
*Math Factory	5 "	1
Explorers Unlimited	3 "	3-4
Cover to Cover II	5 "	5-6
StoryTime	5 "	ES, K
Ripples	2 "	1-2
Science is Discovery	1 "	3
If You Live in a City Where Do You Live?	8 "	4-6
All About You	2 "	1-2
Stepping Into Melody	3 "	1-3
What About You	2 "	---
Search for Science	2 "	6
Science Room	3 "	4-5
Listen and Say Consonants	5 "	1-3
Stepping Into Rhythm	3 "	1-3
Cover to Cover I	5 "	5-6
Places in the News	5 "	5-6
The Magic of Words	4 "	2-3
Tell Me What You See	1 "	1
Scienceland	1 "	2
Adventure Environment	2 "	6
Adventure Economics	2 "	6

*program was dropped in November

APPENDIX II

RECOMMENDATIONS FOR FUTURE PROGRAMS

The recommendations listed below should not be considered in any way as negative staff feelings toward programming. As the above report demonstrates, the faculty has a very positive attitude toward the entire television project. However, there are certain improvements and program additions that can be made in future years that the Lincoln Heights faculty believes will strengthen television programming.

1. If possible develop for all grade levels a math series that emphasizes basic math skills and concepts. The program's context should rely heavily on the use of manipulative aids.

> (WCET continues the search for appropriate math programs and has been awarded a contract by the Ohio State Department of Education to develop a series of 20 programs in intermediate math for which series Dr. Lola May will be the writer-consultant.)

2. Develop a greater representation of all society's cultural groups in the social studies and literature programs. For example neither the present "Cover to Cover" literature programs nor the "StoryTime"

program contains a book about black children nor do they offer a book written by a black author. In like manner, the series "Americans All" does not portray any black Americans.

(StoryTime will include ethnic stories in a series to be completed during 1973-1974. "Americans All" is being revised in line with this suggestion. The suggestion has been sent to other production centers and will be a consideration in the selection of program series for future broadcast.)

3. Integrate into the present art programs contributions of black artists and the impact of African art on our present culture.

(The art series was produced elsewhere. Programs are unlikely to be revised soon, but producers have been notified of this recommendation.)

4. Create more programs that can be completed within a six to eight week period.

(Production of short series is under consideration by various agencies.)

5. Recommend to the Children's Television Workshop that the program "Sesame Street" be reduced to one half-hour per day.

(WCET has repeatedly made this suggestion to the Children's Television Workshop, producers of

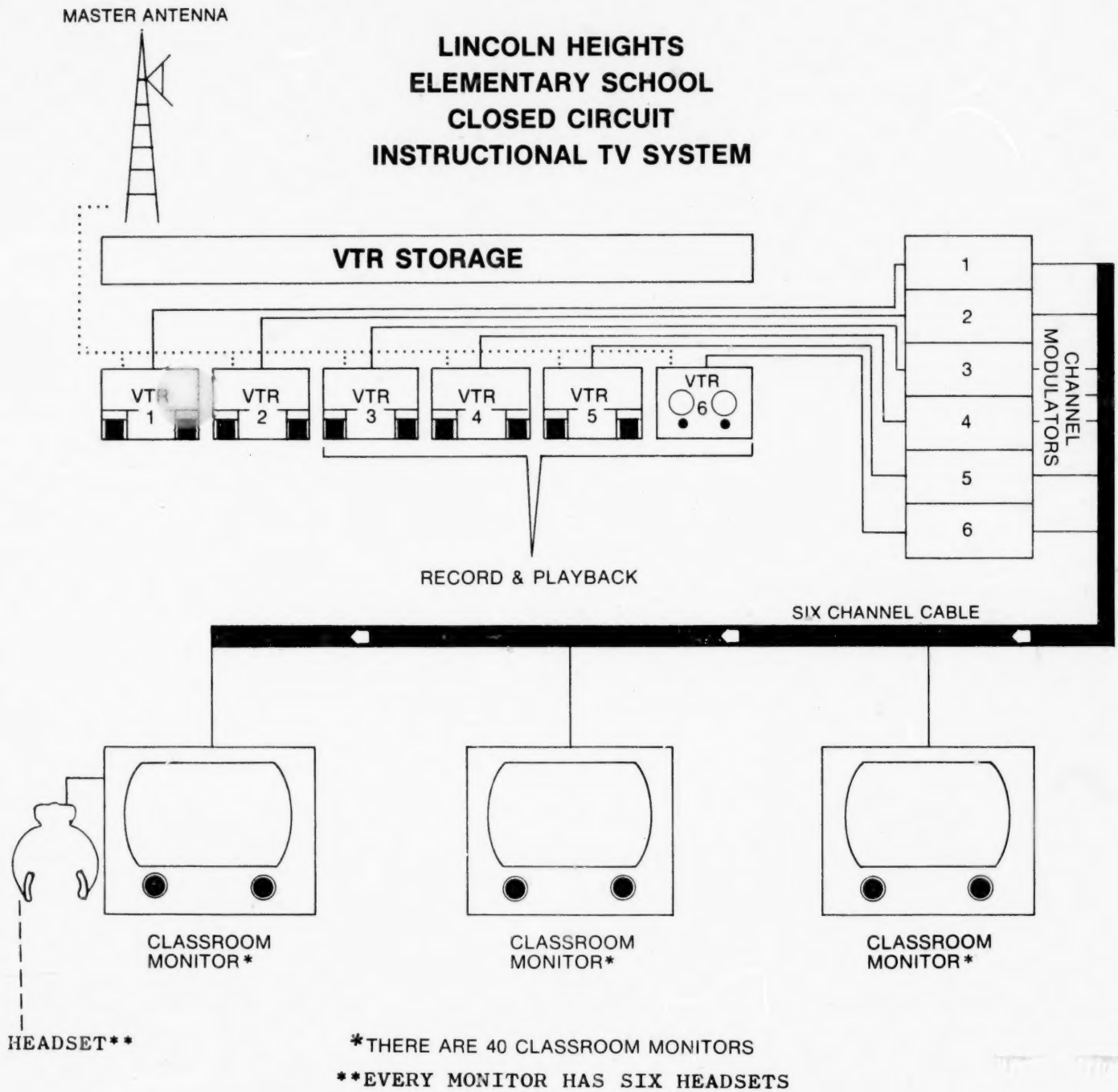
"Sesame Street." They seem to be locked into the one-hour concept, although very few schools can use an hour-long program in its entirety.)

6. Develop a vocabulary building program similar to "The Wordsmith" for children who are in the third and fourth grades.

(A proposal containing a similar idea has been made for state funding. WCET lacks funds to develop a series locally.)

APPENDIX III

SCHEMATIC DIAGRAM OF THE
TELEVISION VIDEO-TAPE SYSTEM



*THERE ARE 40 CLASSROOM MONITORS

**EVERY MONITOR HAS SIX HEADSETS